

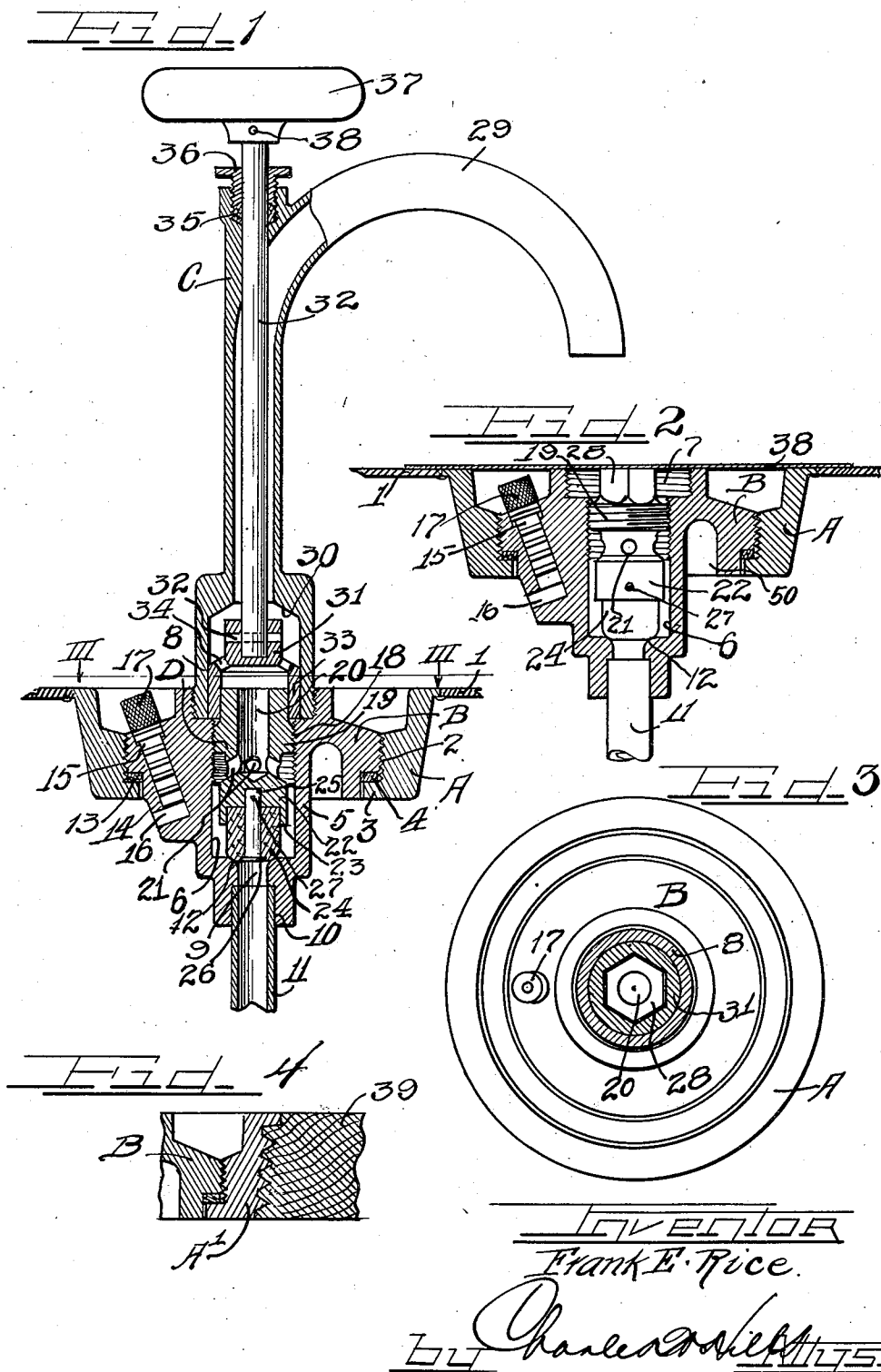
June 15, 1937.

F. E. RICE

2,083,866

BARREL TAPPING MEANS

Filed May 6, 1935



UNITED STATES PATENT OFFICE

2,083,866

BARREL TAPPING MEANS

Frank E. Rice, Detroit, Mich., assignor to American Bush Company, Detroit, Mich., a corporation of Delaware

Application May 6, 1935, Serial No. 20,010

2 Claims. (Cl. 225—3)

The present invention relates to a tappet and more particularly to a system of dispensing small amounts of the contents of barreled liquids, such as beer.

5 There are in favor at the present time pony or eighths barrels or kegs, for sale to consumers, such as householders, who prefer draft beer, but who cannot readily handle and accommodate full sized barrels. Such small barrels and kegs are 10 equipped with various and sundry discharge means of many different kinds and constructions.

The present invention has for an object the provision of a dispensing system wherein a removable faucet structure is utilized in conjunction 15 with a novel bushing structure applied to barrels by the barrel manufacturers. The faucet structure is purchased by the consumer and retained by him for application to such barrels or kegs as he may purchase from time to time.

20 Another object of the present invention is to provide a two part separable bushing structure, for barrels, having one part providing fluid passageway and containing stopper means for controlling fluid flow through the passageway.

25 A further object of the present invention is to provide a two part separable bushing structure having one part providing a fluid passageway and containing stopper means for controlling fluid flow through the passageway and also provided 30 with means for connection with a source of air or gas pressure to supply pressure within a barrel.

A still further object of the present invention is to provide a bushing having a wrench operable stopper and a separable faucet structure applicable to the bushing structure and having wrench 35 means for actuating the stopper.

40 Another and still further object of the present invention is to provide novel stopper means for tap bushes whereby the usual cork may be eliminated.

The invention has for an additional object the provision of a tap bush having self-contained stopper means operable at will for opening or closing the bush to fluid flow.

45 A yet further object of the present invention is to provide a combined bush structure and draught tube construction wherein the tube is permanently connected to the bush structure.

50 A further object of the present invention is to provide a dispensing system for beer barrels and the like, including a combined bush structure and draught tube construction wherein the tube is permanently connected to the bush structure and 55 wherein a removable faucet structure may be

applied to the bush for dispensing the barrel contents.

Another and yet further object of the present invention is to provide a bored bush part with an axially movable stopper within the bore for controlling fluid flow. 5

A still further object of the present invention is to provide a bush and faucet structure which may be economically manufactured, which is simple in operation, and which is constructed for long and continued use. 10

Generally speaking, the bushing structure is constructed so that by removal of one part, access may be had to the interior of a barrel for applying pitch to the interior, as well as means for filling the barrel at a brewery. The removable part 15 has a bore for fluid passage, with a self-contained stopper movable within the bore, for opening or closing said passage to fluid flow. The stopper is actuated by wrench means constituting part of the faucet structure. The bushing structure has 20 no part projecting above the plane of the barrel head, so that any suitable seal, such, for instance, as a revenue stamp, may be applied over the bush structure after the barrel has been filled and is ready for sale. The seal has to be destroyed when the faucet structure is applied to the bush structure for use. 25

The above, other and further objects of the present invention will be apparent from the following description, accompanying drawing, and appended claims. 30

The accompanying drawing illustrates an embodiment of the dispensing system of the present invention, and the views thereof are as follows: 35

Figure 1 is a vertical, central or axial sectional view, through a bush structure and faucet structure, constructed in accordance with the principles of the present invention, showing certain parts in elevation, and with the stopper means in position to close fluid flow through the bushing structure. 40

Figure 2 is a vertical or axial section through the bushing structure of the present invention showing the draught tube, and stopper, in elevation. 45

Figure 3 is a horizontal sectional view taken substantially in the plane indicated by line III—III of Figure 1, and 50

Figure 4 is a fragmental sectional view through a portion of a wooden barrel showing, in place, a bushing structure of the present invention thereto applied.

The drawing will now be explained.

The illustrated form of bushing structure in- 55

cludes two parts or members, one part A, the outer part or member, and the inner removable part or member B. The outer part A, in the form illustrated in Figures 1, 2 and 3 is adapted to be welded to the head 1 of a metal barrel in which a suitable opening has been made for the bushing. The outer part A has a central opening of considerable extent and of sufficient size so that access to the interior of a barrel may be had when the inner part B is removed, for applying pitch to the interior of the barrel. The outer part A has its central opening threaded for a portion of its length as at 2 and with a portion defining a flange 3 of less diameter than the threaded opening, thus providing an annular shoulder 4.

The inner part or member B is formed with a portion 5 which is bored with bores of varying diameters and which projects beyond the inner surface of the outer member A of the bush. The intermediate bore 6 is of greatest length and communicates at its upper end with a larger bore 7 which is interiorly threaded to receive a cooperating threaded portion 8 of a faucet structure, designated generally as C. The intermediate bore 6 communicates with a smaller bore 9 which in turn communicates with a larger bore 10 in which is secured the upper end of a draught tube 11. The junction of the bores 6 and 9 forms a shoulder 12 which constitutes a valve seat, within the inner part B. The inner part B is threaded to engage the threads of the bore 2 of the outer part A and connects these parts together. A sealing washer or gasket 13 is interposed between the inner and outer parts B and A respectively and rests on the annular flange 3 of the outer part A. The inner part B is further provided with a bore 14 to receive an air valve member 15. An angular bore 16 communicates with the bore 14 and opens through a side of the inner part B so that air or gas, under pressure, may be admitted to the interior of the barrel when desired. Normally, the valve 15 is closed by a cap 17 which may be removed for application to the air valve structure of a hose or other suitable pressure supply connection.

Preferably the inner member B may be cored, as at 50 to reduce the weight of this part.

The bore 6, is threaded at 18 near its upper end, that is, near its junction with the larger bore 7.

A plug designated generally as D has an enlarged intermediate portion 19 which is exteriorly threaded to engage the threads 18 of the bore 6. The plug D has a hollow interior 20 for a portion of its length, opening through the upper end of the plug. The plug also has openings 21 serving as communication means between the hollow interior of the plug and its exterior. The lower portion 22 of the plug is counter-bored at 23 to receive a stopper 24, which is supported in the portion 22 of the plug by means of a pin 25, which at its lower end has a head 26 for resting against the lower extremity of the stopper and its upper end is bored to receive a pin 27 which secures the pin 25 in place in the plug. The outer diameter of the portion 22 of the plug is less than the diameter of the bore 6 so that fluid passing upwardly from the draught tube 11 may circulate around the stopper 24 and enter the openings 21 in the plug then pass upwardly through the hollow interior 20, and outwardly through the faucet structure.

The upper extremity of the plug D, on its exterior, is provided with a wrench fit, such as the hexagonal end 28.

The faucet structure C includes a discharge tube 29, formed as a continuation of the part 8 of the faucet structure and is preferably curved so as to discharge the contents of a barrel downwardly into a suitable receptacle such as a glass, stein, or pitcher. The part 8 and the discharge tube 29 may be integrally formed, as by drawing, or, if desired, may be made of separate parts suitably connected to each other. The part 8 of the faucet structure is preferably of greater diameter than the tube 29 and has a hollow interior 30 in which is carried a wrench 31 supported on the lower end of an actuating rod 32, suitably supported in the faucet structure and illustrated as extending through a portion of the tube 29 of the structure. The wrench 31 is secured to the rod 32 by means of a suitable fastening means, such for instance, as a pin 32. The wrench 31 has a hood portion 33 shaped to fit over the wrench fit end 28 of the plug D, in the present instance a hexagonal hood constituting a cap wrench. The hood is apertured as at 34 so that fluid contents from the barrel may escape from the hollow interior 20 of the plug B, outwardly through the wrench 31 and into the discharge tube 29.

The upper end of the rod 32 is secured in the faucet structure C by means of a packing 35 and a gland nut 36 to prevent escape of fluid along the rod 32. A convenient handle or wheel 37 is secured to the outer end of the rod 32 as by a pin 38. The rod 32 is loosely supported within the faucet structure C, so as to be axially movable to fit the wrench 31 over the wrench end 28 of the plug D, as the faucet structure C is applied to the bushing for use. Preferably, the portion 8 of the faucet structure is threaded so as to be threaded into the bore 7 of the inner part B of the bushing structure for connecting the faucet structure to the bushing structure.

When it is desired to fill a barrel provided with a bush structure of the present invention, the stopper 24 may be moved away from the seat 12 by a suitable wrench applied over the extremity 28 of the plug D and the plug rotated in the direction to move the stopper from its seat whereupon beer or other liquids may be supplied to the barrel through the plug D. If on the other hand, this is not rapid enough, the plug may be entirely removed or else, if desired, the inner part B may be removed from the outer part A thus affording a larger opening for filling. In any event before the barrel has been filled the stopper 24 is moved against the seat 12 by a suitable wrench supplied to the plug D and the bushing sealed by means of a revenue stamp or other seal 38 pasted over the entire bushing structure. This is possible inasmuch as no part of the bushing structure projects beyond the plane of the head 1 of the barrel, that is, beyond the plane defined by the upper margins of the outer part A of the bushing structure. Figure 2 shows such a seal applied over the bushing structure of the present invention.

When it is desired to use the dispensing system of the present invention to withdraw beer from a barrel, the faucet structure C is applied to the bushing structure by screwing the part 8 of the faucet structure into the threaded bore 7 of the bushing structure. The handle 37 is manipulated so that the wrench 31 fits over the end 28 of the plug D whereupon the plug D is given a rotation in the direction to withdraw the stopper 24 from against its seat 12. If there is insufficient pressure within the barrel, additional pressure may be created by applying an air pump to

the nipple 15 or connecting a source of gas pressure to the nipple for creation of pressure within the barrel sufficient to force the contents up through the tube 11 and out through the discharge tube 29 into a receptacle held at the end of the discharge tube. After the receptacle has been filled, the handle 37 is rotated in the opposite direction to move the plug D to seat the stopper 24 and thus close fluid passageway through the bush.

This operation may be repeated as many times as there are receptacles to be filled and until the contents of the barrel are wholly exhausted.

The draught tube 11 extends toward and terminates closely adjacent the bottom of the barrel so as to withdraw from the barrel substantially all of its contents. After the barrel has been emptied, the faucet structure C is removed by unscrewing the portion 8 from the inner part B of the bushing structure whereupon the barrel may be returned to the brewery for reuse. The householder retains in his possession the faucet structure C to use on other barrels of beer that he may, from time to time, purchase.

It will be observed that the dispensing structure of the present invention is one which is simple in design, economical to manufacture, and highly efficient in use. The present invention eliminates the need for the usual cork employed in tap bushes, as at the present, thus doing away with having to force the cork into the barrel as is common practice at the present time.

The fact that the bushing structure of the present invention is self-contained enables its use on any and all kinds and types of barrels, such as steel and wood, to make available for instant use a faucet structure of the present invention.

Figure 4 illustrates the adaptation of the bushing structure of the present invention to a wooden barrel. There a head 39 of a wooden barrel is provided with a suitable aperture in which is threaded the outer member A' of a two part bushing structure of the present invention. The inner part B is constructed as the part heretofore described, and everything else is the same as heretofore described.

The invention has been described herein more or less precisely as to details, yet it is to be understood that the invention is not to be limited thereby, as changes may be made in the arrangement and proportion of parts, and equivalents may be substituted, without departing from the spirit and scope of the invention.

The invention is claimed as follows:

1. A dispensing system for tapping beer barrels and the like including a bushing structure and a faucet structure, said bushing structure comprising two separable parts, one of which is provided with a central opening of substantial size, the other of which is removably arranged in said opening, said other part having a central bore and supporting a draught tube communicating with said bore, a stopper movable in said bore to open and close communication between said bore and tube, a plug threaded in said bore and connected to said stopper and rotatable for actuating it in the manner stated, said plug having a hollow interior above the stopper and having means providing flow communication with the interior from the exterior of the plug, said plug being normally disposed to close communication between the tube and bore, said faucet structure adapted to be applied to said bushing and being provided with a delivery tube adapted to receive fluid from the barrel when the stopper is moved away from closing position, said faucet structure having wrench means engageable with said plug to actuate it to open and close communication between the tube and bore, said wrench means having means for flow passage therethrough, and handle means on said faucet structure for actuating said plug by said wrench means.

2. A tap bush structure for beer or like barrels comprising separable outer and inner members which are threaded together in relatively immovable relationship for normal use, said inner member having a shouldered bore through it for fluid passage, a stopper within said bore and movable against and away from said shoulder for controlling fluid flow, a plug within said bore and carrying said stopper and in threaded engagement with said bore to move said stopper as said plug is rotated, said plug having an end adapted for a wrench fit, said plug being hollow through said end and having provision for fluid flow communication between the hollow interior thereof and the exterior of said plug below said end, and a spout structure applicable to said bush having a discharge spout and carrying a wrench for engaging said plug, the portion of said wrench engaging said plug being apertured to afford fluid flow communication between the hollow interior of said plug and said discharge spout, and means carried by said spout structure for manual operation of said wrench and plug.

FRANK E. RICE.